laboratory aquarium jars. It depends in principle upon a water current some degrees lower than that of the aquaria in the laboratory.

The author recommends tall beakers with about 9 inches of water in them. The current of colder water is carried through a U tube of glass, which is connected with the tap and the sink by rubber tubing. The U tube is of ½-inch tubing, and dips some 4½ inches into the beaker of water. This leaves an equal distance of water in the flask below the U tube.

The cool current flowing through the U tube cools the water in immediate contact with its surface. A downward convection current is thus caused in the middle of the jar. The water at the wall of the jar, exposed to the higher temperature of the laboratory will supply an upward convection current. Enough of the surface water is carried downward in the descending current to insure oxygenation of the whole volume.

For delicate floating larvæ, such as *Asterias,* the author shows that this method is much more satisfactory than streams of air bubbles. The danger of mechanical injury is eliminated, and it is possible to isolate the vessels so as to prevent infection even from the atmosphere. Manifestly a series of U tubes can be used so as to make the same stream serve a whole battery of vessels.

SIMPLE HISTOLOGICAL METHODS

Salkind (J. R. M. S., Aug., 1913, p. 426) has brought together some simplifications of histological methods:

1. *Sublimate fixation*—Instead of removing the salts of mercury by the usual method, the iodine treatment may be carried on during the removal of the paraffin by placing the mounted paraffin sections in xylol saturated with iodine. In order to do this, after fixing in Zenker's or Helly's fluid, the objects are placed in a solution containing 3 per cent potassium bichromate and 1 or 2 per cent hydrochloric acid. If acid solutions are not suitable, use the following instead: Water, 100 c.c.; corrosive sublimate, 4 grms.; potassium bichromate, 2.5 grms.; chloral hydrate, 4 grms.

2. *Aceton-Ether Method of Paraffin Embedding*—Remove tissue from water or weak alcohol and place in a fluid composed as

follows: Acetone, 2 parts; ether, 1 part; water, 1 part. Keep in this at least one hour for each millimeter of thickness of the tissue. Transfer to a mixture of equal parts of acetone and ether saturated with paraffin. Transfer to paraffin.

3. *Simultaneous Polychrome Stain*—Saturated watery toluid-in-blue with 3 per cent formol, 12 parts; alcohol, 90 per cent, 8 parts; acetone, 4 parts; saturated naphthol-yellow in 90 per cent alcohol, 2 parts; saturated erythrosin pur., in 90 per cent alcohol, 3 parts. Mix in above order. Add 5 to 10 parts of distilled water. Let stand. No precipitate should appear. The fluid should be a dark blue, with a violet shade in a few minutes.

4. *Adhesions of Sections to Slide*—When the paraffin sections are floating in warm water, add one drop of cedarwood oil. This spreads as a thin film over the surface of the water. Sections mounted direct from this fluid will adhere firmly.

REDUCING STOCK SOLUTIONS

Löwe (Zeits. wiss. Mikr., XXIX, p. 545) suggests a simple method for reducing concentrated stock solutions of reagents to the dilute form in which they are to be used. Pour into the graduate a quantity of the stock solution, whose cubic centimeters equal in number the *percentage strength* desired in the dilute solution. Add to this enough of the diluting fluid to make a total number of cubic centimeters equal to the percentage strength of the original stock solution. If, for example, one wishes to make a 2 per cent solution from a 15 per cent stock solution, put 2 c.c. of the stock solution into the graduate and then fill until it totals 15 c.c.

PARASITOLOGY; LABORATORY GUIDE

This laboratory manual for the study of parasites will be of great value to zoology teachers who are not themselves experts in parasitology. The exercises included in the book are based on courses in the University of California on Human Parasitology and Veterinary Parasitology, each of one half year.

The introduction deals briefly with the biology of parasitism. The body of the book is divided into three parts, as follows: I., Medical Etomology; II., Helminthology; and III., Life History Studies on Living Parasites.